conveyed directly into the embryo-sac by the channel of the pollen-tube; a similar process appears to exist in the conjugation of some of the lower Algæ; in other cases the spermatic fluid is conveyed from organs situated at a distance from the parent-cell of the germinal vesicle by the agency of the locomotive structures (spermatozoids) developed in the spermatic cells, bathed in and discharged with their contents, and themselves composed of the nitrogenous protoplasmic matter of cell-contents." A series of thirty-six clever microscopic figures was given in illustration of the memoir.

GEOLOGICAL SOCIETY.

February 20, 1856.—D. Sharpe, Esq., President, in the Chair.

"On the Affinities of the great extinct Bird (*Gastornis parisiensis*, Hébert) from the lower Eocene near Paris." By Prof. Owen, F.R.S., F.G.S.

Prof. Owen communicated the results of his comparisons of the fossil tibia of the *Gastornis parisiensis*, Hébert,—a large bird from the lower Eocene deposits at Meudon near Paris—with the tibiæ of known recent and fossil birds.

The tibia of the *Gastornis* presents the same median position of the supra-tendinal bridge as in the Albatross and the lamellirostral web-footed birds; but, as the same position of the bridge occurs in the *Notornis*, the Gallinule, the Raven, and some accipitrine birds, that character is not conclusive of the affinities of the *Gastornis* to the Palmipeds; and it is further invalidated by a difference in the aspect of the plane of the lower outlet of the bridge. In the Albatross (*Diomedæa*) and the Lamellirostres, the foramen or outlet looks directly forwards; its plane is vertical. In the oblique aspect of that outlet, the *Gastornis* more resembles the large Waders (*Grallæ*) and the *Dinornis* tribe. Amongst the *Gallinaceæ*, the Turkey (*Meleagris*) nearly resembles the *Gastornis* in the position of the bridge; and more nearly resembles it than does the Albatross or the Swan in the low tuberosity external to the bridge above the base of the outer condyle, as well as in the shallow groove dividing that tuberosity from the bridge. The depression on the fore-part of the tibia above the distal condyles, if natural to the *Gastornis*, is a structure not precisely repeated in any of the *Grallæ*. In the *Ciconia Argala* the anterior interspace of the condyles forms a cavity, bounded above by the tubercle and ridge developed from the bridge, and by the oblique converging upper borders of the condyles below. The canal of the bridge opens below into the concavity. In the *Grus Antigone* the lower border of the outlet of the bridge defines, with a tubercle external to it, the shallow supracondyloid cavity; but there is no definite fossa, like that in the *Gastornis*.

In the *Notornis*, the breadth of the lower end of the tibia a little exceeds the depth or fore-and-aft diameter of the condyles. The supra-tendinal bridge is of moderate breadth, is transverse, and median in position; its lower outlet looks forward just above the wide and shallow intercondyloid space. The extinct *Aptornis* chiefly differs from the *Notornis* in the less median position of the bridge, and in

the more shallow canal leading to it. In the *Dinornis*, the breadth and depth of the condyles are equal; the outer condyle is the broadest, the inner one is the most prominent; their articular surfaces are so continuous as to leave no space answering to the intercondyloid space in the *Aptornis*, *Notornis*, &c. The bridge is situated nearer the inner side of the bone, is subtransverse, rather narrow, with a widely elliptical lower outlet opening above the inner condyle.

The *Gastornis* was a bird of the size of the Ostrich, but with more bulky proportions, and in that respect more resembling the *Dinornis*: it appears to have had nearer affinities with the wading order, and therein, perhaps, to the *Rallidæ*; but the modifications of its tibia indicate a genus of birds distinct from all previously known genera.

"Description of some Mammalian Fossils from the Red Crag of Suffolk." By Prof. Owen, F.R.S., F.G.S.

The fossils described in this paper were referred by the author to the following genera and species:—*Rhinoceros*, a species nearly allied to, if not identical with, *Rh. Schleiermacheri*, Kaup; from crag-pits at Wolverston, Sutton, and Felixstow, Suffolk. *Tapirus priscus*, Kaup; from Sutton. *Sus palæochœrus*, Kaup; from Sutton. *Sus antiquus*, Kaup; from Ramsholt, Suffolk. *Equus*: two species, one apparently *Eq. plicidens*, Owen; from Bawdsey, Suffolk. *Cervus dicranocerus*, Kaup; from Ipswich and Sutton. *Cervus megaceros*, from Felixstow. *Ursus*, sp. indet., less than *Ur. spelæus*. *Canis*, apparently *C. Lupus*. *Felix pardoïdes*, Owen; from Newbourn, Suffolk. *Mastodon longirostris*, Kaup; from Sutton, Felixstow, and Ipswich. *Ziphius longirostris*, Cuv. (*Dioplodon Becanii*, Gervais); *Hoplocetus crassidens*, Gervais; *Balœnodon affinis*, *Bal. definita*, *Bal. gibbosa*, *Bal. emarginata*, Owen; and remains of species of *Delphinus*, of the size of the Grampus.

The conclusion which the author deduced from the large proportion of miocene forms of mammalia, and the very great numerical superiority of individual fossil specimens from the Red Crag referable to miocene species, and from the admixture of these fossils with a few eocene and pleistocene species, was that the Red Crag was the *débris* of former tertiary strata of different periods, and, in a great proportion, of the miocene period.

MISCELLANEOUS.

The British Museum—its Catalogues and accessions in Zoology.

"It is with great pleasure," said the Prince Charles Bonaparte, in presenting the Academy of Sciences of Paris with a copy of Dr. Gray's recent 'Catalogue of the Tortoises,' "it is with great pleasure that I lay before you this new work on the Chelonian Reptiles, because it is a true model of what the catalogues of great museums ought to be, taking the science at its standing point, and furnishing figures of new or doubtful species and of such as have been ill represented. In one word, it is a work worthy of its author, of the national establish-